



Master of Science in Computer Science 9-Course Program Requirements

9 Classes (5 Core + 4 Elective) + 2 Immersion (if needed)

Placement Exams & Immersion Courses

Choose 1:

- ☐ **MPCS Programming Placement Exam** or
- ☐ **MPCS 50101 Concepts of Programming (Immersion Programming)**

Choose 1:

- ☐ **Discrete Math Placement Exam** or
- ☐ **MPCS 50103 Discrete Math (Immersion Math)**

Immersion classes are in addition to the 9 degree required courses. Students have the choice to take immersion classes or take the placement exams.

Core Courses

Programming Choose 1

- ☐ **Java Programming***
- ☐ **Python Programming***

*Students taking MPCS 50101 Concepts of Programming (Immersion Programming) must enroll in Java or Python.

- ☐ **Advanced Programming****
- ☐ **C Programming****
- ☐ **Intermediate Python Programming****

**Advanced programming classes are only available through the MPCS Programming Placement Exams.

Only one core programming class is allowed. Additional programming classes cannot be taken as electives.

All core programming classes are offered in the Autumn quarter. Only Python Programming is offered in the Winter quarter.

Theory Choose 1

- ☐ **Algorithms**
- ☐ **Intermediate Algorithms**
- ☐ **Advanced Algorithms**
- ☐ **Topics in Algorithmic Game Theory**

Intermediate Algorithms requires a previous algorithms class.

Advanced Algorithms and Topics in Algorithmic Game Theory can be taken as electives after the core theory requirement is fulfilled.

Systems Choose 3

- ☐ **Advanced Computer Architecture**
- ☐ **Advanced Computer Systems**
- ☐ **Compilers**
- ☐ **Databases**
- ☐ **Distributed Systems**
- ☐ **Functional Programming**
- ☐ **GPU Programming**
- ☐ **Intro to Computer Security**
- ☐ **Intro to Computer Systems**
- ☐ **Intro to Unix Systems**
- ☐ **Networks**
- ☐ **Operating Systems**
- ☐ **Parallel Programming**

Additional core systems classes can be taken as electives after the core systems requirement is fulfilled.

Electives Courses

Choose 4

- ☐ **Advanced C++**
- ☐ **Advanced Data Analytics**
- ☐ **Advanced iOS**
- ☐ **Advanced Topics in Cloud Computing**
- ☐ **Advanced UI/UX**
- ☐ **Android Application Development**
- ☐ **App Development Capstone**
- ☐ **Applied Data Analysis**
- ☐ **Applied Financial Technology**
- ☐ **Applied Software Engineering**
- ☐ **Big Data App Architecture**

- ☐ **C++ for Advanced Programmers**
- ☐ **Cloud Computing**
- ☐ **Entrepreneurship in Technology**
- ☐ **Foundations of Computational Data Analysis**
- ☐ **Full Stack Software Engineering**
- ☐ **Generative AI**
- ☐ **High Performance Computing**
- ☐ **Human-Computer Interaction**
- ☐ **Intro to Blockchain**
- ☐ **Intro to Scientific Computing**
- ☐ **Intro to Software Engineering**
- ☐ **iOS Application Development**
- ☐ **Machine Learning**
- ☐ **MPCS Practicum**

- ☐ **Natural Language Processing**
- ☐ **OO Architecture**
- ☐ **OO Programming**
- ☐ **Product Management**
- ☐ **Software Quality Assurance**
- ☐ **Time Series Analysis and Stochastic Processes**
- ☐ **Topics/Software Engineering**
- ☐ **Topics/Software: Making an Impact**
- ☐ **UI/UX Design**
- ☐ **Web Development**

Elective classes can be taken after three core classes are completed or concurrent with the third core class.

Check course prerequisites for eligibility.

Sample Course Plans (Full-Time)

Full time students should plan to take 3 classes per quarter. Students should plan to meet with an academic advisor in the MPCS to develop a course plan for their time in the program.

Sample Course Plan: **For students with a background in programming and Discrete Math***

Academic Year	Autumn	Winter	Spring	Summer
1	Core Programming Core Systems Algorithms	Core Systems Elective Elective	Core Systems Elective Elective	

*Requires MPCS Programming and Discrete Math placement exams.

Sample Course Plan: **For students with a programming background, Discrete Math needed.**

Academic Year	Autumn	Winter	Spring	Summer
1	Core Programming Core Systems Discrete Math	Core Systems Algorithms Elective	Core Systems Elective Elective	Elective*

*Requires MPCS Programming placement exam. Final class can be completed as a 4th class in the Spring, a Summer course, or students can return to complete one class in the Autumn. Students on a F1 visa cannot graduate in the summer quarter.

Sample Course Plan: **For students without a background in programming or Discrete Math, summer start.**

Academic Year	Summer (online courses)	Autumn	Winter	Spring
1	Can take one or both: Concepts of Programming Discrete Math	Core Programming Core Systems Algorithms	Core Systems Elective Elective	Core Systems Elective Elective

Sample Course Plan: **For students without a background in programming or Discrete Math, autumn start.**

Autumn	Autumn	Winter	Spring	Summer
1	Concepts of Programming Discrete Math Reading and Research*	Core Programming Algorithms Core Systems	Core Systems Elective Elective	Core Systems Elective Elective
2: Second Autumn**	Core Systems Elective Elective			

*Zero tuition course to maintain full-time status, if needed.

** Can also take Summer classes but must graduate in Autumn with remaining courses.

See course schedule for current offerings
and course details:
mpcs-courses.cs.uchicago.edu



THE UNIVERSITY OF
CHICAGO

**MASTERS PROGRAM
IN COMPUTER SCIENCE**